

## Abstract

The present invention is in the field of plant biochemistry and genetics. More specifically the invention relates to nucleic acid molecules from plant cells, in particular, genomic DNA sequences from rice plants and nucleic acid molecules that contain markers, in particular, single nucleotide polymorphism (SNP) and repetitive element markers. In addition, the present invention provides nucleic acid molecules having regulatory elements or encoding proteins or fragments thereof. The invention also relates to proteins and fragments of proteins so encoded and antibodies capable of binding the proteins. The invention also relates to methods of using the nucleic acid molecules, markers, repetitive elements and fragments of repetitive elements, regulatory elements, proteins and fragments of proteins, and antibodies, for example for genome mapping, gene identification and analysis, plant breeding, preparation of constructs for use in plant gene expression, and transgenic plants.

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